

- (d) determining an optimal pacer device operation setting based on measurements of said parameter at a plurality of settings.

14 (New). A method of enhancing paced cardiac performance by optimizing the operation of a pacing device, the method comprising the steps of:

- (a) measuring a selected cardiac performance parameter indicative of the performance of a patient's heart during multi-site pacing to establish a baseline using a first setting comprising a first pacing mode and first inter-site delay interval;
- (b) varying the setting by changing an inter-site delay interval or pacing mode;
- (c) measuring said parameter during pacing using a changed setting; and
- (d) determining an optimal inter-site delay interval and pacing mode configuration based on measurements of said parameter at a plurality of settings.

15. The method of claim 14 comprising:

- (e) after step (c), for each pacing mode inter-site delay interval and mode configuration used, calculating an average value of the selected parameter of interest;
- (f) determining an optimal inter-site delay interval and pacing mode configuration from among the averages determined in step (e); and

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(g) setting the inter-site delays and pacing mode configuration of the pacemaker to the optimal inter-site delay pattern and pacing mode configuration established in step (f).

16. A method as in claim 14 wherein said selected cardiac performance parameter of interest is selected from the group consisting of atrial cycle length (ACL), ventricle cycle length (VCL), ventricular volumes, blood flow velocity, total acoustic noise and direct measurement of pulse pressure.

17. A method as in claim 16 wherein a plurality of selected cardiac performance parameters of interest are employed in obtaining an optimal inter-site delay pattern and pacing mode configuration.

18. A method as in claim 16 including the step of performing said optimization method with respect to an exercising patient.

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*and*

19. A method of enhancing one or more aspects of cardiac performance by optimizing pacing mode configuration and/or inter-site delay pattern in a programmable multi-chamber, multi-site pacemaker in which a selected cardiac parameter of interest of known relation to an aspect of cardiac performance is selected and optimized by comparing a plurality of inter-site delay patterns and/or pacing mode configurations in a manner which determines the optimum delay pattern and pacing mode to optimize said parameter and thereby optimize said aspect of cardiac performance.